

ABSTRACT

A solder alloy and a multi-component soldering system, to the use of the same, and to a method for repairing gas turbine components are described herein.

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The solder alloy based on nickel includes the following elements: nickel (Ni), chromium (Cr), cobalt (Co), molybdenum (Mo), aluminum (Al), tantalum (Ta), niobium (Nb), yttrium (Y), hafnium (Hf), palladium (Pd), boron (B) and silicon (Si).

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The multi-component soldering system includes the solder alloy and additionally at least one additive material. The additive materials include the following elements: nickel (Ni), chromium (Cr), cobalt (Co), molybdenum (Mo), aluminum (Al), tantalum (Ta), titanium (Ti), rhenium (Re), iron (Fe), niobium (Nb), yttrium (Y), hafnium (Hf), palladium (Pd), carbon (C), zirconium (Zr), boron (B) and silicon (Si).

20 A specific mixing of solder alloy and additive materials produces a multi-component soldering system that may be specifically adapted to the material of the component to be repaired, the mixture ratio of solder alloy and additive materials being freely selectable.

25 The repair method is based on high-temperature diffusion soldering using the solder alloy hereof or the multi-component soldering system hereof.